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ABSTRACT

Issues pertaining to educational finance in colleges and universities are considered. It is suggested that solving problems of organization will lead to shifts in management style, which in turn may affect flows of funds to disciplines. The outcome may be a change in academic scope and either limiting or expanding institutional opportunities. The principal questions for research on institutional finance stem from an understanding that colleges and universities are not businesses, and from a shift of attention away from questions of productive efficiency and toward a new understanding of the importance of process in the structuring of institutional finance. It is claimed that colleges and universities are not businesses because they are not organized vertically, are not concerned with profit, and have not traditionally invested much energy and resources in the process of conducting business itself. In organizing an institutional research agency, it is important to recognize that the American campus is fundamentally like a municipality, and that the problems that institutions of higher education will face in the 1980s--organizationally, structurally, and financially--are similar to those that American communities have been facing for more than a decade. Questions on curriculum and the scope of the academic enterprise are addressed in relation to financial planning. Additional topics include: public policy related to the financing of graduate education; changes in how the federal government pays for sponsored research; and the financial consequences of regulations, competition, and cooperation among institutions. (SW)

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A View From The Trenches

Postsecondary Education Finance: The Institutional View

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INTRODUCTION

The title for this essay was bestowed by David Mandell in an attempt to capture something of the grimness besetting American colleges and universities. I wish I could report that Mr. Mandell is wrong, that despite considerable problems most colleges and universities look forward to the 1980s with confidence. The truth is, that sense of purpose built over three decades of unparalleled growth has given way on most campuses to a seemingly permanent doubt that what worked yesterday will make sense tomorrow. Given this climate, the question posed by this essay is simply, "Can new research on the financing of postsecondary education make more solvable the problems institutions of higher education are likely to face?" We actually know precious little about how institutions of higher education finance themselves. We have yet to develop accepted measures of economic efficiency for institutions of higher education; to build an understanding of how students finance their education; or to determine enrollment's sensitivity to price and financial aid--and time is running out. For most colleges and universities the next five years will prove critical.

Most discussions of institutional finance today are dominated by a single observation: fewer eighteen year olds must translate eventually into both smaller and fewer

colleges and universities. With even the nation's most prestigious private research universities becoming increasingly tuition-dependent, declines in the overall availability of students will mean a fundamental adjustment in American higher education. There is reason to believe, however, that higher education is being, if not misled, then certainly distracted by this almost single-minded preoccupation with likely declines in overall enrollment. Implicit in this concentration on enrollment is the assumption that if demand could be increased, then colleges and universities could expect substantially fewer problems over the course of the 1980s. Yet American colleges and universities are in trouble today not because their enrollments will decline at some future date, but because inflation and the other economic dislocations of the 1970s already have exacted an extraordinary toll on every institution's energies and resources.

Probably the best evidence of the new importance of educational finance is what has come to be known as the president's lament. In the fall of each year the chief executive officer of the institution, relying on macroprojections of declining enrollments, paints for the community in general, and the trustees or regents in particular, a glum picture of imminent collapse. Not only will many colleges and universities be lacking students in sufficient numbers to maintain educational quality, but the very

cultural and scientific resources higher education provides to the society at large will be threatened by a kind of intellectual hardening of the arteries, as fewer scholars of real talent are attracted to academic pursuits. Come spring, however, and the submission of the annual budget, presidential rhetoric and focus change substantially. Gone is the concentration on enrollment. Indeed, a close observer would note that most budgets are predicated on small but sustaining increases in enrollment despite last fall's exhortations on the need for eventual reductions in institutional scale. What concerns the president in the spring is not the declining number of students but the problems of diminishing resources. Now the president's lament details inflation's continued tax on the economic status of the faculty and staff, the further deterioration of the physical plant, and the impossibility of making those critical investments in new fields which will secure the institution's long-term academic future. In the spring the president knows that even if enrollments improve, the prospects for his or her campus in today's economy remain dismal.

When asked why they do not attempt to consolidate their institutions in anticipation of long-term enrollment declines, presidents will respond by belittling the projections they so convincingly cited just last fall. No one, they point out, can be sure participation rates will not

increase; the projections themselves often vary; and in any case, "We are simply going to work harder and buck the trend." One state's department of education, seeking a wide-ranging discussion of enrollment prospects, sent to each institution's chief executive officer projections detailing the dramatic population decline in anticipated high school graduates in that state over the next decade. Having pondered these data, each campus president was then asked to make projections for his or her institution and forward them to the state department of education. To no one's surprise only a handful of institutions projected even modest declines in enrollment. Indeed, more than 80 percent of the responding institutions projected continued enrollment growth for most of the 1980s. This survey should not be dismissed as just one more example of higher education's ability to deny the magnitude of its own problems. In fact, what most chief executive officers were reporting in this state was a conviction that, given the current economic climate, their institutions could not remain viable without increasing enrollments. As long as the total funds available were in any way proportional to total enrollment, then institutional viability demanded more students.

Behind most institutions' inability to plan for declining enrollments lie two simple truths. First, today's economy has made colleges and universities too expensive,

has made them unable either to reduce their costs or to generate sufficient alternate sources of income to offset the tax of inflation. Institutions can pay this tax only by firing faculty and staff, by reducing the living standards of those who remain, by allowing the physical plant to deteriorate, and by eliminating programs, not according to a rational plan but as the accidents of natural attrition allow. As a result, a kind of mean-spiritedness infects the campus. Faculty and staff, concerned as much for their own security as for their institution's viability, come to believe that their institution is adrift without plan or purpose and certainly without remedy. In this setting it is probably wrong to speak of resource allocations. Rather, it is pain that is being allocated, making the administration's principal task that of devising combinations of cuts, postponements, and deferrals which will do the least damage.

The second truth is that colleges and universities in the 1980s are far more likely to run out of money than they are to run out of students. With or without continued inflation, higher education faces a liquidity crisis of major proportions. If inflation and high interest rates continue, that crisis will be upon us in the next six to nine months, as increasing numbers of students find themselves unable even to borrow sufficient funds to pay their tuition bills. The intended reductions in federal programs of student financial assistance will further limit the flow of monies avail-

able to higher education. State and local funds, still the dominant source of higher education financing, will be subject to the same pressures, as state after state comes to terms with taxpayers' revolts and a general clamor for diminished public-sector spending. Enrollment decline will no doubt lend legitimacy to efforts to reduce overall public spending for higher education. Hemmed in on all sides by demands that they do more with less, those responsible for American colleges and universities will find themselves in an increasingly frenetic search for new resources and new, less costly ways of doing business.

This fundamental preoccupation with resources, their availability and efficient use, promises to make the critical issues of higher education almost exclusively those of finance. If I am correct in this prognosis, then educational research in the 1980s inevitably will tilt toward the applied, in an effort to provide institutions with strategies for making immediate decisions with long-term consequences. These applications, however, must be grounded in a basic understanding of how colleges and universities operate--the "givens" of their organizational structure, academic traditions, and definition of roles. Only then can we guage the likely impact on higher education of rapid changes in the economic and political environment, and develop appropriate techniques for helping individual institutions cope with the financial pressures of the 1980s. For

these reasons, the following investigation proceeds according to three broad areas of concern: organization and management, academic scope and financial planning, and higher education's capacity for change.

Failure of the Business Paradigm

There is a common perception, particularly among higher education's friends in the corporate world, that if America's colleges and universities were more businesslike, then higher education could get on with the task of saving itself. Considerable energy and substantial sums of money from corporate coffers have been invested in pursuit of this ideal. From the outset it was assumed that what higher education required were management systems, consisting of technical aids and planning models, with which a campus could systematically allocate resources among competing programs and departments. What is now clear is that the technical apparatus of management seldom travels well, either from the world of business to the academy or, for that matter, from campus to campus. Neither all-purpose computerized planning systems, nor cost accounting manuals, nor prepackaged training programs for middle managers have actually changed how colleges and universities make decisions or spend money. Inevitably the promised projections of supply and demand have proved unreliable, decision rules have floundered in the face of political realities, and management strategies designed to encourage efficiencies have proved of little help in a labor-intensive industry which seldom, if ever, produces measurable outputs.

Perhaps it is time to admit that this endeavor has failed because it was wrong-headed to begin with. Colleges and universities simply are not businesses. The neoclassic theory of the firm, with its focus on efficiency and its specification of inputs and outputs, has little to offer studies of educational finance except an appreciation for precision, mathematical elegance, and conceptual clarity. Colleges and universities are not businesses because they are not concerned with profit, and as a consequence cannot have their efficiency measured in traditional terms of unit costs. Colleges and universities are not businesses because they are not organized vertically. One does not work one's way up through a college or university. One does not serve an apprenticeship by starting out in the physics department, moving to the education school, and concluding one's preparation for major responsibility with a stint on the provost's executive staff. Finally, colleges and universities are not businesses in the sense that they have traditionally invested extraordinary energy and resources in the process of doing business itself. In the language of economic theory, colleges and universities insist that properties of their fundamental transactions--and not just their outputs--are inherently interesting.

The Campus as Municipality

Perhaps the way to proceed, therefore, in organizing an institutional research agenda is to recognize that the

American campus is fundamentally like a municipality, and that the problems that institutions of higher education will face in the 1980s--organizationally, structurally, and financially--are similar to those that American communities have been facing for more than a decade. First, the American college, like the American municipality, is organized horizontally. Because the departments in each college are considered co-equal, measures of comparative success are difficult to define. We do not expect a police department to be either managed or evaluated using the same measures of efficiency as a department of health. Neither do we expect physics departments to organize themselves as do departments of English. In horizontal organizations, comparative measures come from looking outward to other police departments, or health departments, or English departments.

Colleges and universities, again like municipalities, are also serviced by bureaucracies which remain outside the value system which gives purpose to the community as a whole. Institutions of higher education are expected to educate, to generate new knowledge, and to perform public service--all tasks which, while requiring bureaucratic support, never require the bureaucrats' direct participation. Here is probably the principal organizational difference between the firm and the college or municipality. Certainly in many large corporations middle management plays a simi-

lar bureaucratic role, and to that extent the firm has not observed its own rules for efficiency. In practice as well as theory, however, middle management remains a transitional zone between entry-level jobs and true corporate power. It is, except in rare cases, a zone which must be traversed by anybody expecting to rise to the top of the corporate hierarchy.

In colleges and municipalities, then, the bureaucracy is an independent entity formed to support the activity of the enterprise without being, in any productive sense, a part of it. College bureaucracy is a separate career with its own benchmarks and successes. No comptroller ever becomes a college president just as no city finance manager ever becomes mayor. Even the lowliest assistant professor, particularly at a campus on which Ph.D.'s are called "Doctor," can extract extraordinary deference from the most high-ranking bureaucrat. Watch, some time, a vice-president for business, probably earning in excess of $40,000 per year, carefully, deferentially, and yet somehow obscurely, explain to an assistant professor the funds remaining in the "Doctor's" research grant. What is really happening in this interchange reflects an investment on the part of the bureaucracy in its own impenetrability. The way to preserve deference and yet ward off the academic's intrusion into the comptroller's world is to make a mystery of the workings of the bureaucracy itself, in this case, the mys-

teries of fiduciary accounting. To be productive, in other words, the bureaucracy decreases its efficiency by making its own transactions less rational.

At the same time, the faculty makes its own investment in this process. Unable to judge rationally the merits of each other's scholarly output, research faculty place primary importance on peer review and evaluation. Personnel committees, for example, seldom consider candidates directly. Rather, they review reports collected from outside, from presumably unbiased scholars in the candidate's field, and then forward their own report to yet another panel whose duty is to make sure the personnel committee followed proper procedure. The products of this process are really twofold: a double check of each candidate's credentials and an implicit check on the proposing department's standing within its own domain.

Research Consequences of the Analogies

What are the research consequences of these two analogies--the misleading paradigm of business, and the more suggestive metaphor of the municipality? In the first place, our preoccupation with technically proficient management systems from the world of business has detracted from the interactions among organizational structure, management style, and fiscal performance. The most helpful research on higher education finance in the last decade may well be the systematic attempts of a few mostly private institutions

to evolve budget and planning systems. At the University of Pennsylvania, for example, we have introduced over the last decade a complex system of decentralized management and planning which has fundamentally changed how our individual schools relate to the central administration and how individual faculty convert entrepreneurial instincts into academic enterprises. Stanford University has adopted a far more centralized but no less specialized approach to planning which balances individual initiative with institutional need. Both are experimental management systems; both try to capture and guide their institutions by implementing complex tradeoff strategies; and both appear to be successful in that Stanford and the University of Pennsylvania closed the 1970s in remarkably good financial as well as academic order. What we do not know, however, is the extent to which the two experiments provide general insights into the task of management. When do incentives work? Under what conditions does decentralization increase administrative cost? Can separate components of a single enterprise have differing economic experiences and still be considered an integral part of the overall enterprise?

Second, when the false analogy of the college and the corporation is rejected, there is little reason for continued research on the economic efficiency of higher education as measured by standard outputs, typically identified as cost per credit hour or cost per major. We know that this kind

of efficiency will increase simply because colleges and universities will have less money in the 1980s--an application of the inverse of Howard Bowen's theory of revenue by expense. This simple theoretical insight contrasts with the actual effects that standardized allocation systems have on institutional behavior and expectations. Most public institutions receive their funds based on standard formulas linking full-time equivalent students, courses of study, and associated costs. Initially such formulas were devised by state budget officers as a means of making, if not equitable at least politically acceptable, allocations among competing campuses within state systems. For the most part, such formulas represent entitlements, a fixed rate of unit reimbursement. Because such formulas were devised during a period of ever-increasing enrollment, entitlements were expected to increase proportionately. The coming decline in enrollment, however, has made clear that this process cannot simply be reversed, for there are fixed as well as variable costs within higher education, and, on the average, enrollments might decline 15 percent before an institution could substantially reduce its expense base. Already some colleges facing substantial enrollment declines or arbitrary reductions in state appropriations are being forced to cope with the management consequences of formulas which, in fact, do not express well the cost function of higher education. As the decade progresses, more and more

public institutions will face the quandary of managing decline in an environment bounded by the unintended consequences of fixed formulas. Most institutions lack the political leverage to change those formulas. Here, then, a similar set of management questions pertains. How can the overall aims of the institution be pursued despite the specificity of the formulas? Can public colleges and universities successfully diversify their activities in spite of the implied limitations of these formulas?

What we lack are truly successful studies of the cost of either teaching or research. What we seek is a basic measure of the minimum expense necessary to produce a credible educational output. Traditionally, we have assumed that the answer will come in the form of a minimum expense per student, per credit hour, or per major. By focusing on outputs, however, we have overlooked the fact that it is neither students, nor courses, nor majors which cost money, but academic departments. Most institutions of higher education fill their departments largely in response to disciplinary concerns and traditions and then ask what these people can teach and whether they can teach enough students to offset their cost. In this environment the notion of economic efficiency evaporates, particularly when a department, because of its disciplinary specialty, cannot attract enough students or external research support to offset its costs. Departments do not wish to be efficient

but to be inclusive. The better the department, the more abundant its resources, the more likely that it can offer research and instruction in all of the discipline's relevant subfields. Colleges and universities in the pursuit of academic excellence, as Bowen made clear, are in the business of spending not saving money.

Third, the municipality analogy maintains that in horizontal organizations, comparative measures come from looking outward to other such organizations. Unfortunately, we have also learned that truly comparable cost data in higher education are not likely to be available. The Bowen-Minter studies, despite considerable attention to detail and instruction, produced the same confusion of terms and reference points that the HEGIS data are credited with introducing into discussions of higher education finance. Actually, it is now clear that the HEGIS data, when used carefully and with due attention to proper aggregation, provide usable estimates of higher education costs, though not in sufficiently precise detail to identify higher education's economic inefficiencies.

Probably the best data on higher education cost have been produced by the Consortium on Financing Higher Education (COFHE), and there is an important lesson to be learned from that success. The Consortium--thirty private, highly selective, high-cost undergraduate institutions--has conducted special cost surveys in three key areas: under-

graduate admissions, development, and student services. These studies were successful, first, because the presidents of the institutions believed that comparable cost figures were important to the good management of their institutions. Second, the COFHE studies worked because the data themselves were developed interactively through extensive conversations between the study staff and the managers of those units being evaluated. In roundtable fashion, definitions were developed, data specified and collected, and initial results compared. Final material was then reviewed by each participating institution so that all the accounting anomalies could be fully noted in an extensive set of footnotes. While these studies remain confidential, the data instruments themselves can be used in other settings, provided there is a similar conviction on the part of those completing the questionnaires that the data could be used to improve the planning and management of the institution. Thus, the first lesson the COFHE experience teaches is that cost studies completed for research purposes are futile simply because no one is quite sure how the data will be used. The second lesson is that cost studies probably work only when the number of participating institutions is relatively small and where there is a history of cooporative effort. Because working consortia are rare and because such groups seldom combine public and private institutions or institutions of radically different scales and purposes, there

inevitably will be a limit to the kinds of comparative cost analyses we can perform.

Means and Ends: Measuring Process

In the classic theory of the firm, economic efficiency is maximized when transaction costs equal zero. For colleges and universities, this is simply not the case. One of the outputs, if you will, of an institution of higher education is the very process by which it reaches decisions. Transactions, in other words, have real costs because they are an integral part of what the institution provides. Means and ends in the academic world become economically inseparable.

Of the several ways of demonstrating this point, probably the easiest is to focus on the planning process as it has developed within most major research universities. In such self-governed institutions in which the individual faculty serve as the university's principal entrepreneurs, all that planning can insure, and even then imperfectly, is a context for creative minds to seek the limits of their own inquisitiveness. Because scientific as well as humanistic discovery is often piecemeal, frequently disorganized, and when it comes, almost always unexpected, no major American university has been able to develop a master plan which clearly sets forth future paths of inquiry. Such universities have, instead, concentrated on defining

processes which maintain continuity and balance among the core disciplines and professions. Indeed it is these processes, one manifestation of which is the seemingly endless round of committee meetings, that provide coherence to the academy by guaranteeing standards of quality as well as by insuring that new ideas are well tested before being accepted as part of the scientific canon. Unable to define standards of acceptable proofs in disciplines other than their own, academics invest extraordinary energy in making sure that the process of governance works--a process which has real costs associated with it and which in many ways is one of the university's principal products. While we are unlikely to make universities better--even technologically more efficient--by eliminating these costs, we ought to be able to estimate their magnitude better and to define their benefits.

Our first research task, then, is to develop more reasonable measures of the efficiency of support systems and decision rules which have evolved to manage colleges and universities. Probably the best approach would be to follow the COFHE example and, working with a relatively small number of institutions with a history of cooperative ventures, develop useful standards for administrative as well as procedural costs. The COFHE experience suggests that cost studies work best when they focus on recognizable management activity: admissions, development, student

services. The experience of libraries in developing comparative cost data indicates that this activity is also suittable for cost analysis.

In all institutions, even the most teaching-oriented colleges, there are similar kinds of costs associated with the development of curricula. Here, too, the process is as important as the product, and economic efficiency is not likely to be achieved at its expense. There is, in other words, a procedural as well as an instructional cost to the English curriculum, one seldom associated directly with students, or contact hours, or majors. Our second research task, then, should be to provide better measures of what might be called these fixed costs of instruction. Eventually we must come as well to a better understanding of how changing curricula and student/faculty interests increase and decrease the procedural costs associated with curricular change.

Roles and Responsibilities

Although questions of organization and management fall within the traditional purview of research on institutional finance, questions on curriculum and the scope of the academic enterprise have been omitted from the educational finance research agenda. Indeed, an all but impermeable barrier has been erected within the modern academy separating questions of money from questions of value. This division begins with the belief, developed and framed by the nation's very best institutions, that they are in business neither to save money nor to be efficient, but to excel. The corollary to Bowen's first law of educational finance--that colleges and universities spend all the money they can get--is that an institution knows it has excelled when it can act independently of financial constraints. Thus, the more prestigious the institution, the more likely it is to admit students without reference to their ability to pay, to view academic appointments in terms of the scholarly merit of the candidates rather than their long-term cost to the institution, and to assume that all quality institutions offer a rich mix of extracurricular activities, including intercollegiate athletics in minor as well as major sports, extensive recreational activities for all, well-endowed libraries, theater complexes, and research-oriented museums.

This separation between questions of money and questions of value also explains the peculiar division of management responsibilities that has grown up within the American academy. On most campuses a tight-fisted chief business officer is expected to protect the fiscal integrity of the institution from the profligacy of the faculty. The role assigned to the chief academic officer, by contrast, is to make sure that treasurers and comptrollers do not limit academic aspiration, do not make the academy either too businesslike or too forgetful that its mission is to generate new knowledge even when that enterprise requires spending money the institution may not have. Adapting the language of Bowen's revenue theory of expense, the job of the treasurer or comptroller is to save, while that of the provost is to spend.

During the 1960s, this division of roles resulted in a budgeting strategy not unlike the practice of setting one's watch five minutes ahead. Recognizing the likelihood that academic units would overspend their budgets, most business officers held out or hid a percentage of the institution's expected income. Under normal conditions this underbudgeting preserved an amount sufficient to cover the inevitable overruns. The college, like the professor with his watch set five minutes fast, arrived at year's end roughly on target.

By the mid-1970s, however, underbudgeting no longer worked. Overruns began exceeding the amounts held in reserve. Hindsight tells us that the budgetary deals between business and academic officers depended on the constant flow of new cash in a relatively noninflationary economy. What made the bargains of the 1960s work was not only the amount of money held in reserve but the windfall income, the unexpected gifts, the accelerated research programs, or just the extra students showing up to avoid the draft. The advent of rapid inflation and a sluggish economy, coupled with a decline in the attractiveness of college for many white males, exhausted most institutions' reserves, thus exposing the fragility of higher education's financial base. As the economic condition worsened, faculty, in particular, took an increasing interest in their institution's fiscal plight, blurring the distinction between financial and academic responsibility. On most campuses that interest initially was confined to the faculty's traditional oversight function; but faculty committees began insisting on complete data, independent access to the institution's books, and the opportunity to bring their own considerable expertise to bear on what hitherto had been considered questions undeserving of their scholarly attention. Within a few institutions, faculty intrusions into fiscal affairs went further, and academics now occupy positions once considered the sole preserve of curmudgeons.

It is not merely coincidence that Stanford University and the University of Pennsylvania, two of the better-planned and fiscally more successful universities, have installed academics as chief fiscal officers. At Pennsylvania, the institution I know best, the development of Responsibility Center Budgeting with its complex set of incentives and cost algorithms was seen from the outset as an inherently academic enterprise presided over by a remarkably diverse group: a lawyer, a metallurgist, an historian, two economists, a chemist, and a computer scientist. As an entire university looked on, we experimented with the organizational sinews that for a generation had bound the university together. Having made explicit the traditional dysfunction between a university planned according to academic ideals and one managed for fiscal solvency, we were accused of distorting the university's mission by a preoccupation with efficient management and income generation. Yet the experiment worked, and the university prospered, as we all came to understand that what was required was a common academic language for addressing questions of money as well as questions of value. For different reasons and in different ways this lesson is being learned on most American campuses. Once the budget process is controlled by academics using traditional categories of academic concern, the separation of roles between saver and spender becomes impossible to maintain. That creative tension which once preserved the

academics' sense of being somehow above it all no longer allows an abdication of responsibility in the name of fiscal innocence.

Educational Focus

Just as important to the changing of basic attitudes was the numbing experience of watching finances dramatically shape the structure of the academic enterprise itself. The cause of this change is well documented. During the 1970s institutions of every stripe, from the most well-endowed to the least, became ever more dependent on their tuition incomes. Ironically, students came to matter in the 1970s, as they had never quite mattered in the 1960s, once faculties understood that student activity could be translated directly into the economic well-being of their academic departments. To preserve that well-being, faculties began to acquiesce to student demands for curricular freedom. Given college students' increasing vocationalism in the 1970s, these influences had their most dramatic impact on the humanities. Richard Jenson of the Newberry Library, projecting from recent trends, has estimated, for example, that the last student majoring in American history will probably graduate sometime just after 1985, a consequence of the precipitous decline in majors but not in course enrollments. This suggests a fundamental shift in faculty and student perception of the nature and purpose of the history curricu-

lum. Gone is that sense of the past as a single story; instead, students, with faculty encouragement, approach history courses as they would a smorgasbord, taking this course or that as impulse and interest dictate. In the name of economic survival, history departments have abandoned their sequential requirements in order to preserve the discipline's overall enrollment.

The same pressures have also led to the distortion of faculty profiles, particularly within small liberal arts colleges. One such college sought to bolster its enrollment in 1970 by developing a nursing program, which, by the close of the decade, had absorbed twelve of the college's eighty five FTE faculty slots. The result was that the college, once known for excellence in the liberal arts, had stripped its traditional departments of all appointments not necessary for servicing its core curriculum. By 1980, with nursing enrollments halved and the nursing faculty 80 percent tenured, new enrollments in business and science courses could only be taught by once again eliminating basic appointments in the humanities. What was once a flourishing enterprise may now have trouble meeting basic accreditation standards, even though overall income from total enrollment has remained constant over the decade.

Research universities face possibly more acute problems. While they, too, have become more tuition-dependent than before, these universities have also witnessed the extension

of the market metaphor to the competition for research grants. As indirect cost recoveries have escalated, those long-term and sustaining grants which once formed the base of federal research policy have all but evaporated. Like any middle-sized business, university research divisions must make their budgets every year, constantly shifting their product mix despite the fact that the faculty profiles are fixed, on the one hand, by tenure and, on the other, by disciplinary priorities. The answer on many campuses has been to develop a more flexible research faculty, one that literally can be fired when the funds run out. The cost, however, has been an increasing division between the disciplinary concerns of the standing faculty and the research interests of those actually funded by external grants. Today, few faculty members develop academic research interests and then seek money. Rather, they identify pools of money and define their interests accordingly.

The result of these trends has been a growing awareness that the shape of the academic program is, in fact, a function of the nature of the institution's financing. The need to preserve enrollment leads to changes in curriculum requirements as well as in the distribution of faculty appointments among the disciplines. With the federal government increasingly using market mechanisms to distribute research funding, the disciplinary focus of departments and divisions is being defined by the particular success

of individual entrepreneurs in capturing ever-scarcer federal research dollars. The result is that no chief academic officer, however strong, can say, "We decide the academic mission of our college."

Modeling Tradeoffs

Any research agenda addressing these concerns must necessarily be exploratory. We need, first, a language which more explicitly links the fiscal and the academic; second, we need a set of measurements which captures the variations among fiscal constraints, faculty attitudes, and institutional responses. For purposes of federal policy, we need to identify better the academic consequences of funding patterns and the extent to which reliance on market mechanisms to create research agendas taxes an institution's ability to concentrate its academic investments. We need to understand more fully the compounding effect of faculty collective bargining on work patterns, on curricula, and on research productivity. We have to learn to specify the indirect as well as the direct costs of governance, and we must provide a framework for reconciling the trustees' sense of economic responsibility with the faculty's traditional claim to sole authority over questions of curriculum and degrees.

One way to think about these problems is to consider the costs associated with conflicting goals, whether internally developed or externally imposed. A classic

example of these often-hidden costs is the dysfunctionalism that affirmative action programs have introduced into collegiate finance--a dysfunctionalism born not of the inappropriateness of the goals but rather of their unintended and largely unnoticed levy on institutional budgets. When most affirmative action programs were being framed, there was a common assumption that women and disadvantaged minorities were excluded from the academy principally by "old boy" networks, by academic standards which encouraged only the most traditional kinds of research and achievement, and by college and university administrations unwilling to seek out candidates who would bring true diversity to their campuses. As the last decade has taught, the impediments to affirmative action are considerably more complex. As it turned out, affirmative action as a goal was too often in competition with other equally important goals held by the campus community. In static or declining institutions, it simply was not possible to have affirmative action and faculty contraction and continued opportunities for promotion to tenure and continued new appointments bringing younger scholars into the academy and extended mandatory retirement to age 70 or beyond. College personnel systems are ordered structures, relatively incapable, given constant or diminishing funds, of amendment. We know something about this case because a recent spate of research into faculty flows has developed a calculus

for estimating costs of conflicting goals as well as for defining solution sets which are less likely to disappoint everyone. Using linear programming techniques, for example, Michael Feuer and others have developed tradeoff strategies which allow an administrator to calculate how much more must be spent to meet affirmative action goals and still maintain promotions to tenure or to achieve reductions in the overall size of the faculty without eliminating all appointments of new assistant professors.

The same research strategy holds promise for the analysis of other goal conflicts within the collegiate decision process. Principal among planning needs for the 1980s, for example, are strategies which take account of the implicit tradeoffs among balanced budgets, continued investments in the standing disciplines, new investments in interdisciplinary programs, and special investments in programs of demonstrated excellence. Traditionally, college and university budgeting has treated the decision to appoint a new assistant professor as a marginal investment of those discretionary funds routinely available to senior administrators. The true cost of that decision, however, in terms of subsequent tenure, library, laboratory, and computer resources, as well as supporting faculty appointments, is almost never calculated; hence, its inherent conflict with other university priorities goes wholly unnoticed. A modest start has been made in developing models for these financial/academic decisions.

A number of universities, for example, have developed tenure analyses to capture the long-term consequences of particular academic appointments and their likely effect on the institution's ability to make additional appointments later on. To date, however, we have neither the tools nor even the constructs necessary for a technically adept discussion of the interrelated costs and tradeoffs involved in the academic, as opposed to the strictly economic, decisions responsible for the institution's major financial obligations.

Perhaps the same kind of technical research on institutional tradeoffs could be used to help competing institutions build cooperative programs which could lead to financially necessary consolidations and mergers. Higher education has not proved particularly adept at recombination, having remained, except in the public sector, essentially a cottage industry. Some suspect that even public systems of higher education are linked rather than coordinate enterprises. Perhaps the same matrix approach to modeling tradeoffs within institutions will prove useful in modeling likely exchanges among institutions. While there is neither guarantee nor precedent for colleges and universities to seek technical advice in moments of institutional crisis, we might well invest in research capable of simulating alternate approaches to cooperative survival.

Focusing on the transactional as well as the productive efficiency of colleges and universities may also provide a much needed framework for evaluating alternate budget and planning strategies. My concern, again, lies in recognizing the legitimacy of investments in the process by which decisions are made, because colleges and universites would be unrecognizable if they sought to increase efficiency by minimizing their transaction costs. The key research questions then become, "How much of an investment should be made in 'ways of doing business' and under what circumstances can added or different investments in the decision process lead to improvements in the productive efficiency of instructional activities?" The most urgent research questions concern the relative advantages and disadvantages of centralized as opposed to decentralized budget and planning mechanisms, and the role of income incentives as opposed to formula allocation of resources. To date, devotees of each viewpoint have made their case by citing examples of well managed institutions and arguing that good results are the product of a particular budget and planning strategy. Absent from these debates has been any standard of measurement or even a common definition which relates either the productive efficiency or the financial stability of a college to how it goes about the business of building budgets, making faculty appointments, and deciding on its likely scale and scope.

Finally, this same focusing on the means as well as the ends of college decision making may provide a framework for understanding the likely effect collective bargaining will have on college and university governance. Some things we know already: it is difficult to distinguish between management and worker functions within a college environment; administrative costs tend to increase once collective bargaining has been instituted since most administrators try to exempt as many "managers" as possible from the collective bargaining unit; and the traditional collegial role of the faculty with responsibility for curriculum and articulation of the institutional mission tends to contract as faculty bargaining units focus on the bread and butter issues of salary, job security, and work load. For this research agenda the two streams I have been developing merge. One way to assess the consequences of the decision of faculty to organize is to perform the same kind of matrix/tradeoff analysis which works, we already know, for evaluating other personnel initiatives such as affirmative action. At the same time, the critical importance of the decision-making process is highlighted whenever the drive for collective bargaining reduces the faculty's willingness to make governance a principal concern. There are already enough state formulas defining workloads--in Pennsylvania, for example--for us to begin to explore the programmatic as well as the financial consequences of such axiomatic decision making.

Innovation and Investment

The relationship between questions of money and questions of value will have an important bearing on higher education's response to a dilemma that society at large will face in the 1980s, a decade during which the United States must rebuild its technological base. This task involves more than just keeping pace with the Japanese or the West Germans; what American society must master now is the art of prospering economically during a period of ever-scarcer resources and a dwindling supply of cheap labor. Today, higher education simply assumes it will play a principal role in this effort, once again supplying the technology and the professionals necessary to revitalize the economy. Those who know the financial health of America's colleges and universities are not so sure. If American colleges and universities barely limp through the 1980s, scrambling from one nearly balanced budget to another, then it is unlikely that there will be a sufficient surplus of intellectual reserves to make the investment the economy seems to require. The inevitable result will be an academic enterprise which contracts for conservation, repressing new ideas for fear that they will compete with established programs for scarce resources.

The problem is likely to be particularly acute in research institutions. Beginning in the latter part of this

decade, these universities will have to replace faculty trained in the 1950s and early 1960s who were largely responsible for the transformation of American scholarship after the Second World War. That replacement function will begin precisely when the quality stock of graduate students is at its lowest ebb in more than three generations. Even during the Depression, scholarly pursuits continued to attract individuals of quality, since the relative risk of academic unemployment was neither greater nor less than the risk of general unemployment. The 1970s, however, with their heightened media exposure to relative employment opportunities, brought a fundamental devaluing of academic careers. Not only was the relative value of an academic's income declining compared to that of other highly educated professionals, but in field after scholarly field there would be, it was announced, literally no room at the inn. The result may prove catastrophic within the next three to five years as graduate students now <u>beginning</u> their studies enter a job market fundamentally different from that of students <u>completing</u> their studies today. Unless graduate schools and teaching faculties can again persuade the best of their students to seek academic careers, prospects for the continued vitality of the American professoriate will be severely limited.

Here, the Mellon Foundation has played an exemplary role, investing sufficient funds in humanities programs at

ten leading universities to appoint new junior faculty and to make tenure possible for the present stock of assistant professors through the early retirement of senior faculty eligible for supplemental retirement benefits. Ironically, the Mellon grants also exemplify the problem universities face when they seek to introduce change into static programs: there is little evidence that either more money or enticing early retirement plans work, or that new appointments will lead to academic innovation as long as the general reputation of a scholarly career remains devalued. On the research side, what we need to know, and rather quickly, is both the risk and benefit of investing extraordinary funds in a limited number of programs in order to produce the maximum rate of change.

Public Policy Implications

This same question becomes critical when we examine public policy as it relates to the financing of graduate education. Prior to 1972, federal funds for higher education were invested principally in specialized programs designed to further basic research, to train scarce professionals, and to build cadres of American experts in the languages, cultures, and political economies of the third world. The bulk of these funds came from four agencies: the Department of Defense, the National Institutes of Health, the National Science Foundation, and the Office of Education. These funds were awarded to fewer than a hundred of the

country's very best research universities. Except for small pilot programs, the basis of awards to graduate students was demonstrated national need. The federal government aided students only when and where it perceived a direct connection between the student's particular training and nationally-defined objectives. The development of a broad-based program of federal student assistance changed all of this, shifting the focus from graduate/professional to undergraduate education, from concentration in perhaps a hundred leading research universities to a diffusion of federal funds to all postsecondary institutions, and from a justification based on demonstrated national need to one based on the entitlements of citizenship.

In fact, in current federal policy the graduate student has been wholly forgotten, at least in part because Congress has discovered the current oversupply of Ph.D.'s. Abandoned as well have been attempts by federal policy makers to choose among and between competing institutions for investments. With every state university and its Washington representatives claiming a share of federal research dollars equal to their state's population or economic activity or some other equalizing index, the distribution of grants and contracts has been entrusted to a market mechanism that operates on the principle: "Within guidelines, let every contract be up for bid. Let price matter, and let us assume that the universities themselves, in order to remain

competitive, will invest in their research programs, presumably with monies garnered through increasingly favorable rules for indirect cost recoveries." While funds thus have remained concentrated in the major research universities, more than ever before grants are perceived as belonging to the researchers themselves rather than to the universities which sponsor their efforts.

Most observers of America's research establishment have come to rue this principle. Most now argue that we require major capital investments if we are to restock the nation's store of scientists and engineers, and re-equip the nation's research laboratories and institutes. What, however, is the best pattern of investment? What mechanisms are available for federal policy makers so that they can maintain a core research establishment comprised of a number of select institutions without making those institutions federal universities or research laboratories? Perhaps part of the answer lies in a better understanding of what happened financially as well as intellectually in the 1950s and 1960s under earlier federal programs of block grants to research universities.

My concern with faculty stocks and the rate of change does not relate exclusively to the future of the research university. My suspicion is that every institution of higher education will be affected. Bowen reports, probably to no one's surprise, that increases in the cost of educa-

tion, as measured by dollars per contact hour, seldom improve education's efficiency, measured quantitatively. Higher education has always held that, given a well-established pecking order among institutions, what justified the extraordinary cost of the premier institutions was the fact that these institutions were principally responsible for educational change. Moreover, once it becomes time for the newer state schools to replace their faculties, the cycle will be complete, extending the scarcity of qualified faculty to large state systems and predominantly undergraduate schools.

Higher Education's Third-Party Payer

There is a story from the early 1970s about a college president lamenting to a friend, who happened to be a hospital director, "What we need is what you've got--third-party payers. My college would certainly be better off if families could finance their children's education the way they finance health care--through something like Blue Cross." It is, of course, this wish that the federal government has granted. By 1980 federal student assistance totaled more than five billion dollars in grants to students and institutions and several more billions in the form of guaranteed and subsidized loans. The hospital director's reply to his envious friend has been lost, but he might have been heard to mutter, "Then, you, too, can learn to pay the piper."

To understand Washington's increasingly critical role as higher education's principal third-party payer, we must begin with changes in how the federal government has come to pay for its sponsored research. For most research universities, the inflation of the 1970s might have had an even more devastating effect had not the federal government changed its method for reimbursing institutions for federally sponsored activity. Indeed, the 1970s marked a major transformation in the funding relationship, with the federal government annually investing $10.5 billion to fund basic and applied research. For more than a decade, the universities had argued that the federal government should pay the full cost of federally funded research. In addition to the salaries and supplies of the researchers themselves, there was the indirect expense of maintaining the university's research enterprise: a certain proportion of the comptroller's office and research administration, a proper share of the library's budget, as well as the maintenance of the laboratories in which the research took place. In the 1970s, Washington accepted the principle of full reimbursement for auditable costs. For research universities, that change in accounting regulations offered a crucially important hedge against inflation. In effect, the federal government increased its reimbursement to these institutions for indirect costs which hitherto had been paid from institutional incomes. The monies thus

freed helped offset the declining value of discretionary funds so that by the close of the decade federal indirect cost recoveries were as important as endowments and helped balance the increasing importance of tuition income.

The new cost recovery principles, however, also initiated a regulatory chain reaction whose full import only now is beginning to be understood. The first step was to make higher education's accounting more complex and the research accountant a highly prized specialist. In this last year, yet another restating of the rules for indirect cost recovery dictated to the research university, "You are entitled to full cost recovery only if you provide full and total documentation for all of your costs." In effect, Washington's federal research bureaucracy has demanded that higher education look more like it, becoming more willing and able to produce the documentary evidence on which bureaucracies thrive. Most onerous and symptomatic of the new rules is the requirement that all of a university's faculty and principal staff, whether or not funded by federal grants, fully report how they divide their efforts among teaching, research, and administration. Cost efficiency and accountability have put the research university on a time clock, one which can be meticulously audited.

In part, the larger importance of these developments lies in the pattern they set for the broader program of student financial assistance. To be "on aid" no longer

carries the connotation of even a decade ago. The simple fact is that all students now qualify, one way or another, for financial assistance in the form of guaranteed loans, work study, or direct grants. It is commonplace now for undergraduates, even from families of considerable personal income, to graduate with substantial indebtedness and then to compound that debt by attending a graduate or professional school.

To understand what is likely to happen to colleges and universities in the 1980s, I want to return to my parable and examine the direct role third-party payers now play in the running of America's hospitals. In the 1970s the fundamental change in hospital finance was the direct payment, under contract, of hospital costs by third-party payers like Blue Cross. In the beginning, everyone benefited. Hospitals were able to recover the full cost of providing care, Blue Cross and other insurers could establish rates in a fixed framework, and the public was served with a increasing variety of well-staffed and well-funded primary care centers. Then inflation took hold. Health care costs rose astronomically and hospitals expected that third-party payers would continue to pay what was necessary to provide a level of care the same as before or better. In state after state, however, Blue Cross officials began to cry foul. The recovery principles of the contracts, they pointed out, meant that hospitals had little or no incentive to restrain

their costs, to bargain assiduously with their unions, or to pool their use of expensive equipment as long as the third party was required by contract to foot the bill. Joined by federal officials equally concerned with rising costs, insurers forced the hospitals to improve their procedures, to share with outsiders their methods of operation and management, and to submit to full audit not only their costs of operation, but their future plans as well. By the decade's end, most of America's major hospitals were locked into a system in which, in exchange for the funds for operation, they submitted to a phalanx of regulations and regulatory bodies concerned with ending duplication and keeping to a minimum increases in unit costs.

It takes little imagination to picture the federal government coming to play a similar regulatory role in the delivery of educational services in the 1980s. During even the worst days of the 1960s protests, most institutions of higher educations thought themselves beyond federal regulation. Whatever their shortcomings in hiring women or minorities, or in providing opportunities to the handicapped, or in developing benevolent employment practices, colleges and universities believed themselves models of enlightened administration when compared to corporations, municipalities, and the armed services. Few college presidents understood that their institutions--precisely because of commitments to equal opportunity and open proceedings--would become

prime targets for the new regulators of the 1970s. Yet what developed was a rush--I am almost tempted to call it an onslaught--of new rules and regulations being persistently applied to the college campus: affirmative action, Title IX for women's athletics, Section 504 for the handicapped, OSHA to provide new work rules, and, finally, a new willingness on the part of the NLRB to look closely at how higher education treated its unions, faculty and otherwise.

In the 1980s the focus of such efforts inevitably will rest on maintaining reasonable unit costs--dollars spent per full-time-equivalent student. From their inception, federal financial aid programs were intended to equalize educational opportunities, not preserve America's colleges and universities. In Washington, however, the suspicion abounds that institutions of higher education, like hospitals, have lost their incentive to reduce costs and curtail expensive and duplicative programs, since so much of the cost can be passed on to students who use federal funds to pay their bills. Over the coming decade these suspicions will collide with the realities of inflation, the extraordinary cost of federal loan entitlements, and declining enrollments. The result, I suspect, will be both cuts in appropriations and new attempts at federally mandated cost containment.

Some of the worst consequences of this scenario might be avoided if the federal government itself took seriously

the comparison between higher education and health care. It is time that federal policy recognized that there is a higher education system in precisely the same way there is a health care delivery system. Too many federal policy makers have been willing to trust the mechanisms of the market to distribute federal assistance. Give the money to students, so runs the dominant federal logic, and their free market choices would provide higher education with an efficient structure. That same logic applied to the health care system would result in a substantial and permanent reduction in both the number of research hospitals (too costly and often in urban centers) and the number of small hospitals in rural areas (too costly and remote.) Whether colleges and universities will willingly accept the same solution that is emerging in the health care field--the establishment of Health Systems Agencies (HSAs) which monitor the duplication of costly services while at the same time insuring that a full range of institutions prospers within the HSA's domain--is not clear. Our tradition has been to fight the encroachment of regional educational planning, even if that has meant that all institutions must suffer and that small private institutions must vanish.

Regulation, Competition, and Cooperation

The research agenda which grows out of these issues is farreaching in scope. The first of our tasks is to help colleges and universities learn the rudiments of

public policy analysis. What cities learned in the 1960s and 1970s--that there are, in fact, ways of measuring the latent effects of federal policies--must now be taught to higher education. We might expect two products from this endeavor: a catalog of actual policies and corresponding effects, and a set of methodologies for measuring the direct budgetary impacts of new as well as continuing regulations.

Ultimately, our analysis of regulatory impact must address changing attitudes and behavior as well as immediate financial consequences. How, for example, are patterns of federal student assistance affecting student and family attitudes toward direct investment in higher education? Once, a long time ago, the financing of higher education was accomplished by a simple contract between tutor and student. While much has changed in the intervening centuries, higher education itself remains a right contingent on the student's ability to perform and benefit from college level work. In this context, higher education has thrived because students and their families have consistently believed that a college degree was an important investment, one worth saving and sacrificing for. The infusion of federal funds, compounded by new regulations reducing the expected parental contribution, has caused a major shift in financial responsibility for colleges, a shift away from parents and savings towards students and loans against

which they have pledged their future earnings. Where family resources in 1970 accounted for more than half of the money outlays for tuition, room, and board, in 1980 the family share of these costs had dropped to less than a third of the total, a shift only partially explained by the expansion of educational opportunities. We now need to know the extent to which students and families are still willing to invest disposable income in pursuit of baccalaureate and advanced degrees. For colleges and universities, the payoff for such research would be a new understanding of higher education's price elasticity, vulnerability to credit shortages, and the likely impact of price changes on enrollment patterns as well as enrollment levels.

We also need to understand how institutional expectations have been changed by federal policy over the last decade. In many ways, what Washington has imposed on the campus is a program purposely devoid of planned choice. In granting aid to students, and then only indirectly, and modestly to institutions, federal student assistance programs forced the market to determine higher education's scale and scope. We are beginning to suspect, however, that market forces may not dramatically affect how students choose their colleges. Indeed, most young people seem to develop only a few, highly predictable options for higher education, suggesting that market inducements, even basic price adjustments, will not alter where the students matriculate. Given a market more characterized by oligopoly--a

few institutions dominating each geographically defined market segment--than by competition, the reliance on student choice to effect educational change is at best a forlorn hope. What we need now is a better understanding of the effect that competition and price have not only on student choice but on the behavior of institutions themselves as they gauge the consequences of changing what they are about.

For research universities, this reliance on market-like mechanisms for distributing federal funds has, if possible, an even greater effect. Once, it was federal policy to make regular and sizable investments in a limited set of major research institutions. By the 1970s, in part to prevent the distribution of basic research dollars on a per capita basis, almost all research grants were awarded by peer review to the best qualified and most imaginative proposals. Over time, the annual competition for research grants has made even the most wizened academic increasingly market oriented. Research teams increasingly are organized for their flexibility in order to respond better to shifts of research dollars from one sub-field to another. At the same time, research universities have made new investments in their own research bureacracies and buildings; they also have invested in pools of skilled investigators who, in another time, would have been members of the faculty, but given most institutions' reluctance to make permanent

commitments in the face of changing research markets, are relegated to a quasi-faculty status. Even the language of research seems to have changed, as major scholars have come to speak freely about "deliverables" as the products of their research. It is the ultimate comingling of questions of value and questions of money.

These developments pose two fundamental research questions. First, how can we best measure the effect that our reliance on market mechanisms has had on the shape of higher education? Second, to what extent can or should we experiment with alternative allocational mechanisms as colleges and universities cope with the dilemmas of the 1980s?

A related research agenda derives from higher education's experiments in cooperative planning and analysis. Here a series of carefully monitored action projects offers the best promise of results, particularly if we can draw on the experience of that limited number of successful consortia and cooperative programs. Probably the best example of these is COFHE, which is playing an increasingly active role as spokesman for and coordinator of the nation's most highly selective institutions. A good example of geographically-based cooperation may be found in the Lehigh Valley Association of Independent Colleges (LVAIC), which includes every sector of the independent market ranging from two highly-selective, full-time undergraduate colleges to a pair of struggling colleges necessarily seeking to attract

new as well as nontraditional learners to their campuses. The Rochester Area Colleges network (RAC), while less focused in its projects, includes public as well as independent institutions. On a still broader scale, the Southern Regional Board of Higher Education, working with a grant from the Ford Foundation, has begun exploring the collective effects of institutional mergers and closures.

CONCLUSION

The three broad topics we have been examining--organization and management, academic scope and financial planning, and higher education's capacity for change--provide a general framework for a research agenda designed to benefit those who labor in institutional trenches. These are not, however, self-contained topics, and I do not mean to recommend that scholars concentrate their research in any one of the three. On the contrary, it seems to me that the must salient feature of our research agenda is its very interconnectedness. Solving problems of organization will lead to shifts in management style, which in turn may affect flows of funds to disciplines, thereby changing academic scope and either limiting or expanding institutional opportunities.

In sum, the principal questions for research on institutional finance stem first from an understanding that colleges and universities are not businesses, and second from a shift of attention away from questions of productive efficiency and towards a new understanding of the importance of process in the structuring of institutional finance. What we need are both new tools and new perspectives--new ways of tracing the numbers through our computers, and, just as importantly, new definitions which better capture the language academics have traditionally used to govern their own enterprises. It is a research agenda which assumes we

already know how to make colleges more efficient--give them less money--and then asks, "What will happen as colleges and universities economize in the face of external constraints?"

Finally, it is a research agenda which assumes that colleges and universities, as conservators of tradition as well as creators and disseminators of knowledge, comprise a system of higher education. The Carnegie Council of Policy Studies in Higher Education probably captured best that sense of enduring values when it noted:

> Taking, as a starting point, 1530, when the Lutheran Church was founded, some 66 institutions that existed then still exist today in the Western world in recognizable forms: the Catholic Church, the Lutheran Church, the parliaments of Iceland and the Isle of Man, and 62 universities.

It is the preservation of that tradition which gives purpose to our research agenda.